

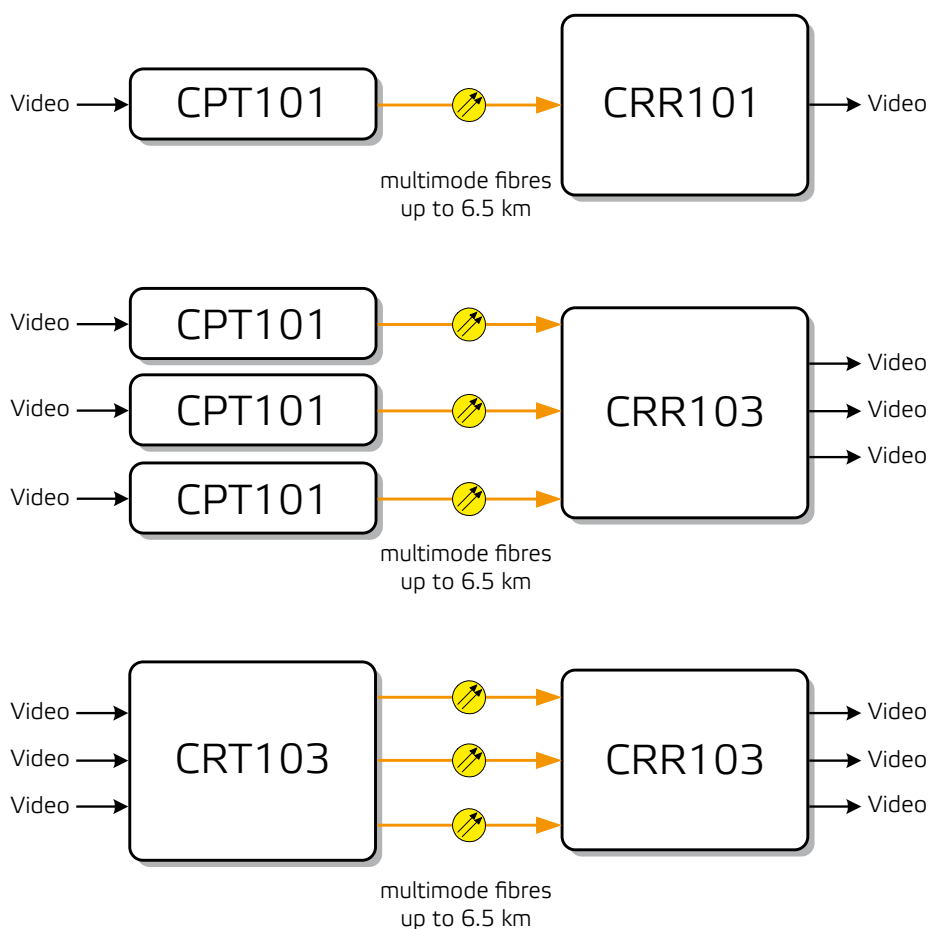
# Single and triple channel video only link

CFO First Mile series consist of fibre optic modems which provide a high quality and lossless video transmission for variety of CCTV applications.



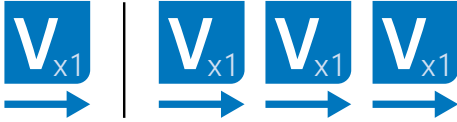
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# CFO100 - Single and triple channel video only link

**CFO100 First Miles series offers a 10-bit video transmission over one multimode fibre / video channel for fixed camera applications.**



Welcome, and thank you for purchasing Teleste's CFO products.

## General

**CFO100** First Mile series offers a highly cost-effective single channel composite video transmission over one multimode fibre.

High quality video image can be transmitted over distances up to 6.5 km depending on the type of multimode fibre in use. A typical application is a point-to-point transmission from a fixed CCTV camera to a monitoring centre.

CFO100 series consist of mini sized stand-alone video transmitter followed by standard 5HP size CFO cards for triple channel video transmitter as well as for single and triple channel receiver operation.

The CPT101 stand-alone transmitter is temperature hardened and is capable of using both 12 VDC or 24 VAC supply voltage.

**CPT101 unit is a compact size housing for special stand-alone installations requiring minimal installation space. Also as an optional DIN rail mounting is possible (item code CIK001).**

**CRT103 and CRR101/103 cards are compatible with all CFO rack systems. Stand-alone options are available with the CMA015 module adapter and separated CPS25x series mains adapter.**

As with all CFO platform products these specific models do meet all typical EMC as well as other environmental and manufacturing related requirements. The permitted operational temperature range is -34...+74°C.

***Note!** New generation CFO100 products are based on digital transmission and are not therefore compatible with previous analog CFO100 series.*

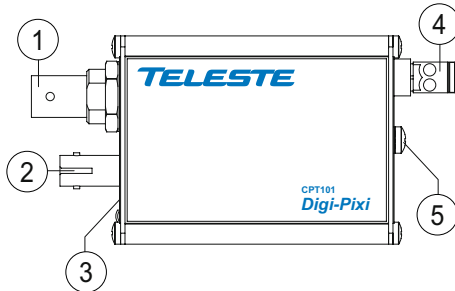
## Features

- >> Low cost video transmission
- >> High performance uncompressed zero delay digital video transmission, SNR 65 dB typical, 10 bit video sampling
- >> One CVBS (PAL/NTSC) video channel
- >> Transmission over on one or three multimode fibre up to 6.5 km
- >> Card format applicable both for rack mount and stand-alone installations
- >> One and triple channel units available for both transmitter and receiver
- >> Transmitter unit available in a special compact-size stand-alone design
- >> Feasible for field hardened operation
- >> Mechanically compact and ruggedised
- >> EMC and environmental conformance

# CPT101 mini sized stand-alone video transmitter

**CAUTION:**  
**THESE OPTICAL UNITS USES CLASS 1M LASER DIODE.**  
**DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL**  
**INSTRUMENTS. APPLICABLE STANDARD**  
**IEC60825-1: 2001**

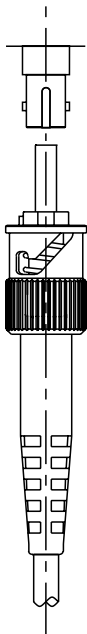
side view



## CPT101 Optical Transmitter

- 1) Video input (BNC female)
- 2) Optical output (ST)
- 3) Power led
- 4) Power supply connector  
(2-pin screw terminal)
- 5) Grounding

top view



## ST Connectors.

Make sure the key is aligned in the slot properly before tightening!



## General

The **CPT101** is a one channel optical transmitter for uni-directional video transmission in a multimode fibre. The current consumption is max. 130 mA (+12V DC).

## Video input

The video input impedance (BNC female) is 75  $\Omega$ . The nominal input level is 1 Vpp.

## Fibre connection

The optical connector is of the type **ST**. The optical output level is typically -4 dBm. For testing purposes the CFO100 series transmitter and receiver can be connected with a short fibre patch cable. The operating wavelength is 1310 nm.

When installing the fibre optic cable, do not exceed the minimum bending radius when connecting cable to the system.

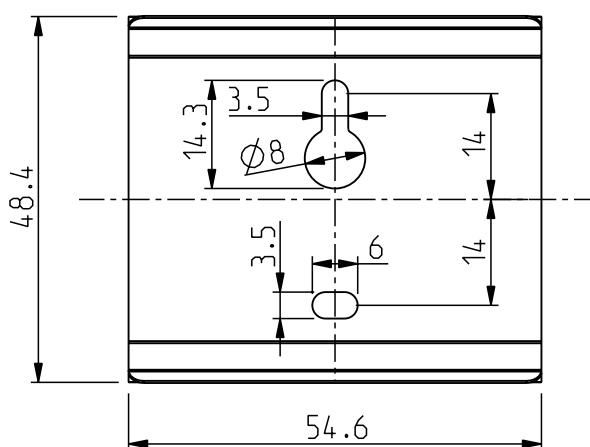
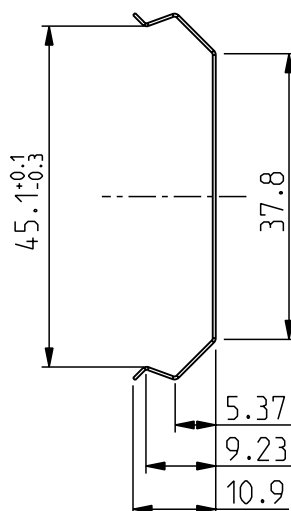
**Note!** For correct optical operation ensure that all optical connectors are cleaned immediately before mating. Connectors should always be cleaned using high purity alcohol (e.g. methyl or isopropyl alcohol). Dry the surfaces using clean compressed air or other equivalent pressurised gas. The female **ST** optical connectors on the equipment should always be protected with dustcaps when there is no fibre inserted.

Optical connection meets class 1M laser safety requirements of IEC 60825-1: 2001 and US department of health services 21 CFR 1040.10 and 1040.11 (1990) when operated within the specified temperature, power supply and duty cycle ranges.

## CPT101 stand-alone installation

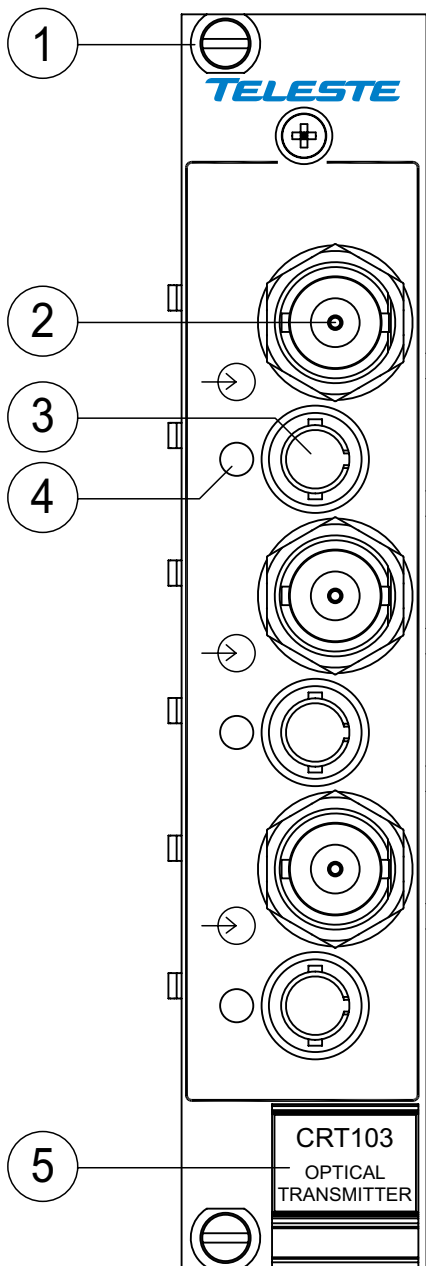
The **CPT101** units are designed for stand-alone installation. The unit should be mounted with a help of wall bracket to a installation place.

The supply voltage can be either +12V DC or 24V AC. The supply voltage is provided by either a surveillance camera unit, or by an external mains adapter. The permitted supply voltage range are 10.5...14 VDC and 16...24 VAC. In DC use the +12V DC supply voltage is supplied by the means of a separate mains adapter with a regulated output, (e.g. **CPS251**). The permitted operational temperature range is -34...+74°C.



Wall bracket dimensions.

# CRT103 triple channel video transmitter



## CRT103 Optical Transmitter

- 1) Locking screw (2 pcs)
- 2) Video input (BNC female)
- 3) Optical output (ST)
- 4) Link status indicator led
- 5) Handle (with unit information)

See further information on dedicated sections.

## CAUTION:

THESE OPTICAL UNITS USES CLASS 1M LASER DIODE.  
DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL  
INSTRUMENTS. APPLICABLE STANDARD  
IEC60825-1: 2001

## General

The **CRT103** is a three channel optical transmitter for uni-directional video transmission in a multimode fibre. The current consumption is 300 mA (+12 VDC).

## Frame installation

The **CRT103** module is to be pushed along the guide rails into the installation frame (e.g. **CSR216** or **316** series) and secured with the two locking screws. The unit can be freely positioned in any slot in the frame. The empty positions in the frame should be blanked off with cover plates. The supply voltage is to be provided by a **CPS384** or **CPS390** power supply unit which are installed back of frame.

## Video connections

The impedance of the video inputs (BNC female) is 75  $\Omega$ . The nominal input level is 1 Vpp.

## Link status indicator LEDs

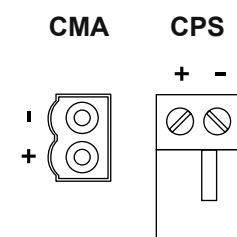
In the (uni-directional) CRT103 units the LINK STATUS led is only monitored by the optical receiver CRR101/103. Therefore the LINK STATUS led in CRT103 units has no real value and is always green.



**CMA015** module adapter.



**CPS251** 12VDC mains adapter.



**DC connection polarity**

## CRT103 stand-alone installation

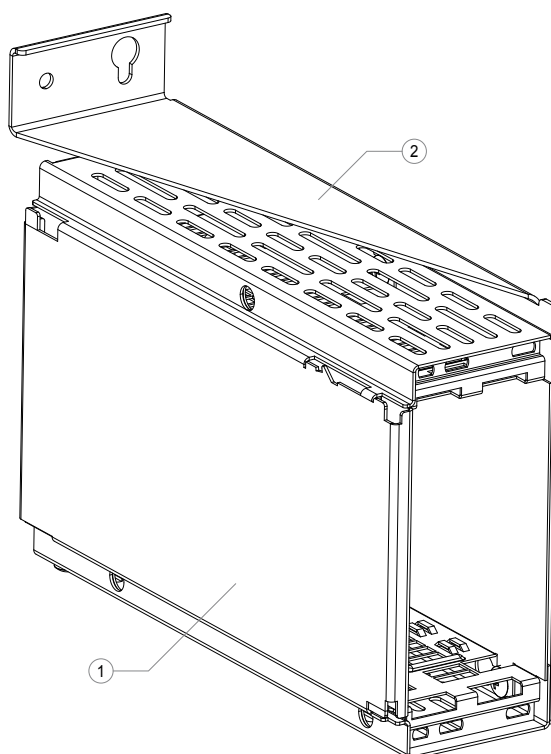
The units can be installed for stand-alone use by using a **CMA015** (installation for one 5HP wide units) module adapters. To insert a **CRT103** card unit into the module adapter, push the unit along the guide rails into module until the unit is firmly attached. Secure the plug-in unit with the upper and lower locking screws. The stand-alone unit should be mounted to a vertical surface.

The permitted supply voltage range is 10.5...14 VDC. The current consumption is 300 mA. The permitted operational temperature range is -34...+74°C.

**Note!** Alternatively the units can be installed for stand-alone use by using a **CMA025** (installation for two 5HP wide units) or **CMA035** (installation for three 5HP wide units) module adapters.

The 12V DC supply voltage is supplied by the means of a separate mains adapter with a regulated output, (e.g. **CPS251**). Please refer to separate documentation for module adapters and mains adapters.

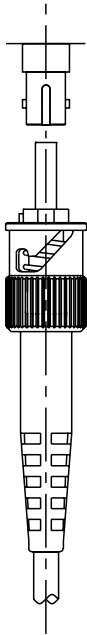
For limited space installation the **CMA015/025/035** module adapters can be rear-mounted by means of an optional installation kit **CIK002**.



**CMA025** module adapter with **CIK002** rear mounting kit.

1. CMA025 module adapter
2. CIK002 rear mounting kit

top view



**ST Connectors.**

Make sure the key is aligned in the slot properly before tightening!



## Fibre connection

The optical connector is of the type **ST**. The optical output level is typically -4 dBm. For testing purposes the CFO100 series transmitter and receiver can be connected with a short fibre patch cable. The operating wavelength is 1310 nm.

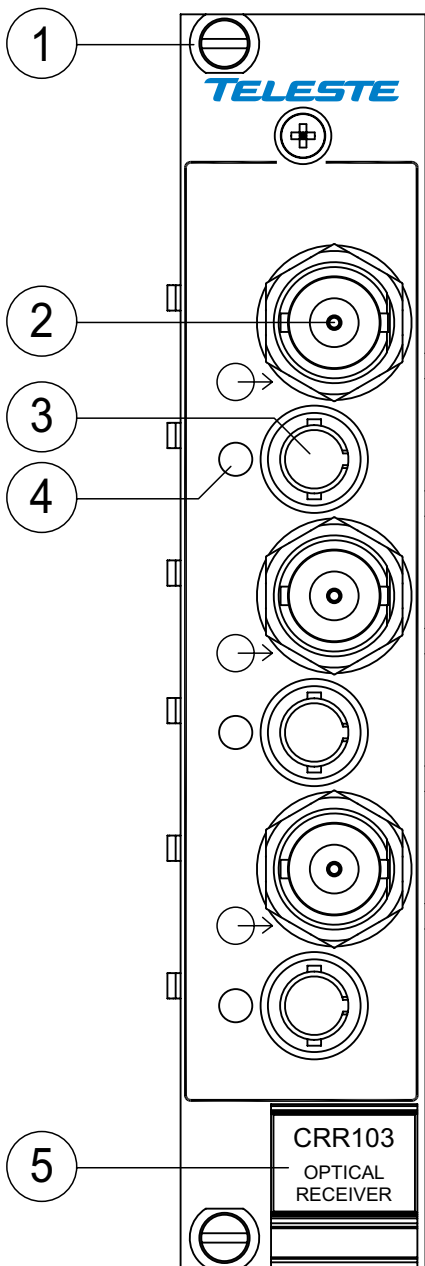
When installing the fibre optic cable, do not exceed the minimum bending radius when connecting cable to the system.

**Note!** For correct optical operation ensure that all optical connectors are cleaned immediately before mating. Connectors should always be cleaned using high purity alcohol (e.g. methyl or isopropyl alcohol). Dry the surfaces using clean compressed air or other equivalent pressurised gas. The female **ST** optical connectors on the equipment should always be protected with dustcaps when there is no fibre inserted.

Optical connection meets class 1M laser safety requirements of IEC 60825-1: 2001 and US department of health services 21 CFR 1040.10 and 1040.11 (1990) when operated within the specified temperature, power supply and duty cycle ranges.



# CRR101/103 single and triple channel video receiver



## CRR103 Optical Receiver

- 1) Locking screw (2 pcs)
- 2) Video output (BNC female)
- 3) Optical input (ST)
- 4) Link status indicator led
- 5) Handle (with unit information)

See further information on dedicated sections.

**Note!** CRR101 is a single channel version of CRR103.

## General

The **CRR101** is a one channel optical receiver for uni-directional video transmission in a multimode fibre. The current consumption is 130 mA (+12 VDC).

The **CRR103** is a three channel optical receiver for uni-directional video transmission in a multimode fibre. The current consumption is 300 mA (+12 VDC).

## Frame installation

The **CRR101/103** module is to be pushed along the guide rails into the installation frame (e.g. **CSR216** or **316** series) and secured with the two locking screws. The unit can be freely positioned in any slot in the frame. The empty positions in the frame should be blanked off with cover plates. The supply voltage is to be provided by a **CPS384** or **CPS390** power supply unit which are installed back of frame.

## Video connections and indicator LEDs

The impedance of the video outputs (BNC female) is 75  $\Omega$ . The nominal output level is 1 Vpp.

## Link status indicator LEDs

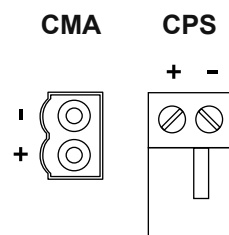
When the optical input signal level is adequate and synchronization on link level is achieved, the LINK STATUS led on the front panel is green. If optical input signal is missing or it's level is too low, the LINK STATUS led is yellow.



**CMA015** module adapter.



**CPS251** 12VDC mains adapter.



**DC connection polarity**

## CRR101/103 stand-alone installation

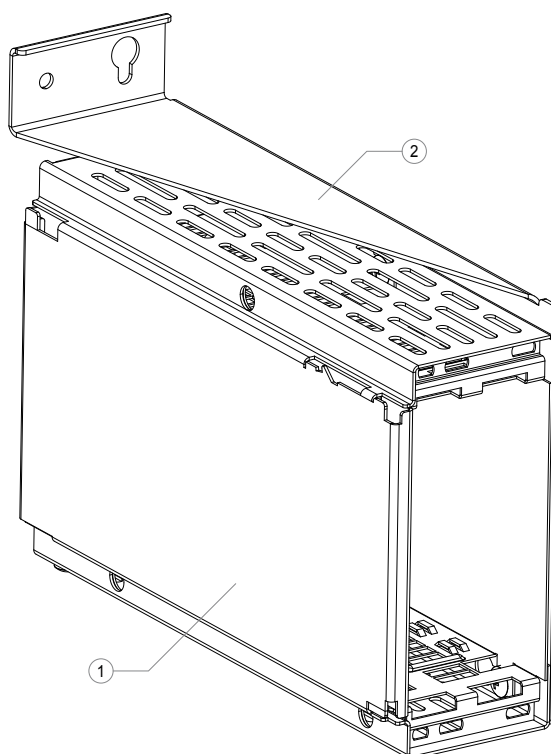
The units can be installed for stand-alone use by using a **CMA015** (installation for one 5HP wide units) module adapters. To insert a **CRR101/103** card unit into the module adapter, push the unit along the guide rails into module until the unit is firmly attached. Secure the plug-in unit with the upper and lower locking screws. The stand-alone unit should be mounted to a vertical surface.

The permitted supply voltage range is 10.5...14 VDC. The current consumption for **CRR101** is 130 mA and for **CRR103** 300 mA. The permitted operational temperature range is -34...+74°C.

**Note!** Alternatively the units can be installed for stand-alone use by using a **CMA025** (installation for two 5HP wide units) or **CMA035** (installation for three 5HP wide units) module adapters.

The 12V DC supply voltage is supplied by the means of a separate mains adapter with a regulated output, (e.g. **CPS251**). Please refer to separate documentation for module adapters and mains adapters.

For limited space installation the **CMA015/025/035** module adapters can be rear-mounted by means of an optional installation kit **CIK002**.



**CMA025** module adapter with **CIK002** rear mounting kit.

1. CMA025 module adapter
2. CIK002 rear mounting kit

top view



**ST Connectors.**

Make sure the key is aligned in the slot properly before tightening!



## Fibre connection

The optical connector is of the type **ST**. Minimum optical input level is typically -25 dBm. No adjustments for input are needed. The operating wavelength is 1310 nm.

When installing the fibre optic cable, do not exceed the minimum bending radius when connecting cable to the system.

**Note!** For correct optical operation ensure that all optical connectors are cleaned immediately before mating. Connectors should always be cleaned using high purity alcohol (e.g. methyl or isopropyl alcohol). Dry the surfaces using clean compressed air or other equivalent pressurised gas. The female **ST** optical connectors on the equipment should always be protected with dustcaps when there is no fibre inserted.

Optical connection meets class 1M laser safety requirements of IEC 60825-1: 2001 and US department of health services 21 CFR 1040.10 and 1040.11 (1990) when operated within the specified temperature, power supply and duty cycle ranges.

## Legal declarations

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## WEEE directive

Directive 2002/96/EC of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) obliges that producers appropriately mark electrical and electronic equipment with the symbol indicating separate collection. This obligation applies to the equipment put on the market in EU after 13 August 2005.

Teleste devices which belong to the scope of the directive have been marked with the separate collection symbol shown below. The marking is according to the standard EN 50419. The symbol indicates that the device has to be collected and treated separately from unsorted municipal waste.



User manual revision history note:

The latest version is always available in pdf-format on our web site:

**[www.teleste.com](http://www.teleste.com)**